UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,781	10/14/2005	Victor Jensen	17922/04387	6801

24024 7590 12/10/2008

CALFEE HALTER & GRISWOLD, LLP
800 SUPERIOR AVENUE
SUITE 1400
CLEVELAND, OH 44114

EXAMINER	
JOHNSON, KEVIN M	
ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
12/10/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocket@calfee.com
dcunin@calfee.com

Office Action Summary	Application No.	Applicant(s)	
	10/526,781	JENSEN, VICTOR	
	Examiner	Art Unit	
	KEVIN M. JOHNSON	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,19-20 and 23-45* is/are pending in the application.

4a) Of the above claim(s) *9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,19,20 and 23-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/21/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status

1. Claim 1 has been amended. New claims 44 and 45 have been added. Claim 9 is withdrawn from examination. Claims 1-8, 19-20 and 23-45 are pending and presented for examination.

2. Claim 25 was improperly identified as a new claim, but should in fact have been identified as having been previously presented.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 11/21/2008 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-7, 19-20, 23, 24, 26-29, 31, 33-35 and 37-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meredith (US 5041320) in view of Valligny et al. (US 2001/0011784).

In regard to claim 1, Meredith teaches elastomer coated silica sand particles that are substantially individual particles (column 3, lines 57-58). The coating process utilized by Meredith ensures that the silica particles are maintained separate from one another throughout the process. Meredith fails to teach that the thermoplastic coating material has a melt index of 20-40 g/10 min and a Shore A hardness of 40-90.

Valligny teaches a coating composition that comprises a polyolefin elastomer. The coating is flexible and has a melt index of 20-30 g/10 min (paragraph 86), but is silent as to the Shore A hardness of the material. It would have been obvious to one skilled in the art at the time of the invention to utilize the coating material taught by Valligny in the process taught by Meredith. Such a modification would have been motivated by the teaching of Meredith that a polyolefin material may be selected for use in the coating process with a reasonable expectation of success. It would necessarily follow that a polyolefin elastomer coating with a melt index of 20-30 g/10 min, as taught by Valligny, would have a Shore A hardness of 40-90. This Shore A hardness value would provide improved wear resistance and shock absorbency to the material.

In regard to claims 2 and 3, Meredith teaches that the weight of the coating is 1-7% of the weight of the silica (column 2, lines 9-11).

In regard to claim 4, silica sand grains selected for use by Meredith have a diameter in the range of 0.1-1 mm (column 3, lines 3-7).

In regard to claim 5, Valligny teaches that the melt index of the material is 20-30 g/10 min (paragraph 86).

In regard to claim 6, it would necessarily follow that a thermoplastic polyolefin composition with a melt index of 20-30 g/10 min, as taught by Valligny, would have a Shore A hardness of 50-80.

In regard to claim 7, Meredith teaches that an additive may be included in the coating composition that improves the bonding of the coating to the silica, for example an organo-silane may be selected as a coupling agent (column 3, lines 33-36).

In regard to claims 19 and 20, Meredith teaches a sports surface that comprises a pile fabric that is partly submerged in a layer of loose coated sand grains (abstract).

In regard to claim 23, Meredith teaches elastomer coated silica sand particles that are substantially individual particles (column 3, lines 57-58). The silica sand grains selected for use by Meredith have a diameter in the range of 0.1-1 mm (column 3, lines 3-7). Meredith teaches that the weight of the coating is 1-7% of the weight of the silica (column 2, lines 9-11). Meredith fails to teach that the thermoplastic coating material has a melt index of 20-40 g/10 min and a Shore A hardness of 40-90.

Valligny teaches a coating composition that comprises a polyolefin elastomer. The coating is flexible and has a melt index of 20-30 g/10 min (paragraph 86), but is silent as to the Shore A hardness of the material. It would have been obvious to one skilled in the art at the time of the invention to utilize the coating material taught by Valligny in the process taught by Meredith. Such a modification would have been motivated by the teaching of Meredith that a polyolefin material may be selected for use

in the coating process with a reasonable expectation of success. It would necessarily follow that a polyolefin elastomer coating with a melt index of 20-30 g/10 min, as taught by Valligny, would have a Shore A hardness of 40-90. This Shore A hardness value would provide improved wear resistance and shock absorbency to the material.

In regard to claims 24 and 29, Meredith teaches that the weight of the coating is 1-7% of the weight of the silica (column 2, lines 9-11). It would necessarily follow that a thermoplastic polyolefin composition with a melt index of 20-30 g/10 min, as taught by Valligny, would have a Shore A hardness of 50-80.

In regard to claims 26, 31, 31 and 37, Valligny teaches that the polyolefin composition may contain an ethylene co-polymer (paragraph 62). It would have been obvious to one skilled in the art at the time of the invention to select an ethylene alpha-olefin copolymer for use in the coating process. Such a modification would have been suggested by the teachings of Valligny of possible copolymers meeting the criteria and that ethylene alpha-olefins are common coating materials (paragraph 24 and 25).

In regard to claims 27, 34 and 38, Meredith teaches that the particles remain separate throughout the coating process. When the grains are handled and transported, a small degree of cohesion between the grains results (column 3, lines 67-68). The cohesion between the grains is a physical phenomenon, and not a chemical bond (column 1, lines 55-58). If the grains are subjected to a compressive force the grains will agglomerate, forming a cohesive unit much larger than the individual grains (column 1, lines 53-55). It would have been obvious to one skilled in the art at the time of the invention that the material produced by Meredith during routine storage and

handling conditions would be exposed to compressive forces, resulting in the formation of agglomerated particles with diameters 10-20 times the diameter of the sand grains.

In regard to claims 28, 35 and 39, Meredith teaches that the coated sand grains do not experience significant cohesion when stored and transported. One skilled in the art at the time of the invention would have found it obvious that a material without significant cohesion would have at least about 90% by weight loose individual particles.

In regard to claim 40, if the grains are subjected to a compressive force the grains will agglomerate, forming a cohesive unit much larger than the individual grains (column 1, lines 53-55). The cohesion between the grains is a physical phenomenon, and not a chemical bond (column 1, lines 55-58). It would have been obvious to one skilled in the art at the time of the invention that the material produced by Meredith could be treated through the application of compressive forces, resulting in the formation of a mass of agglomerated particles with diameters 10-20 times the diameter of the sand grains. Such a modification would have been motivated by the teaching of Meredith that the material agglomerates when exposed to compressive forces, and the routine optimization of the material for applications which require a larger particle size.

In regard to claim 41, Meredith teaches that the application of compressive forces to the material results in the cohesion of the loose particles. It would have been obvious to one skilled in the art at the time of the invention that the material produced by Meredith could be treated through the application of compressive forces, resulting in the formation of a mass of loose flocks with a diameter of 10-40 mm. Such a modification would have been motivated by the teaching of Meredith that the material produces

cohesive masses when exposed to compressive forces, and the routine optimization of the material for applications which require a larger particle size.

In regard to claims 42 and 43, Meredith teaches that the individual loose particles that make up the sports surface can be compacted in to a cohesive layer during the installation process (column 1, lines 52-55). It would have been obvious to one skilled in the art at the time of the invention that by altering the amount of compaction applied to the material, a sports surface could be formed in which the particles experience various degrees of agglomeration. The alteration of the amount of cohesion introduced to the loose particles would be a result of the routine optimization of the performance of the sports surface.

In regard to claims 44 and 45, Meredith teaches that for coating materials that are not readily dispersible in water, the polymeric material may be brought to a liquid condition for the coating process by melting (column 5, line 23-column 6, line 2). This would necessarily mean that the polymeric coating would be melt-solidified.

Valligny teaches that the polyolefin composition may contain an ethylene co-polymer (paragraph 62). It would have been obvious to one skilled in the art at the time of the invention to select an ethylene alpha-olefin copolymer for use in the coating process. Such a modification would have been suggested by the teachings of Valligny of possible copolymers meeting the criteria and that ethylene alpha-olefins are common coating materials (paragraph 24 and 25).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meredith in view of Valligny as applied to claims 1-7 above, and further in view of Bernard et al (US 5723529).

In regard to claim 8, Meredith teaches the use of an organo-silane coupling agent, but fails to disclose one of the species required by the instant claim. Bernard teaches that a coupling agent consisting of a triethoxysilyl and amino group may be used to promote the bonding of silica and elastomers (column 7, lines 51-65). It would have been obvious to one skilled in the art at the time of the invention to utilize the coupling agent taught by Bernard in the process taught by Meredith. Such a modification would have been motivated by the teaching of Meredith that organo-silanes as a coupling agent.

5. Claims 25, 30, 32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meredith in view of Valligny and Bernard as applied to claim 8 above, and further in view of Yanagisawa (JP 09118829 A).

In regard to claims 25, 30, 32 and 36, Meredith, Valligny and Bernard fail to teach that the coupling agent can be mixed with phenolic, furan or melamine resin. Yanagisawa teaches that a silane coupling agent and phenolic resin may be combined on the surface of a silica particle. It would have been obvious to one skilled in the art at the time of the invention to provide the coupling agent to the surface of the silica particles as a mixture with a phenolic resin as taught by Yanagisawa. Such a modification would have been motivated by the teaching of Yanagisawa that silane coupling agents and phenolic resins are commonly coated on the surface of silica particles.

Response to Arguments

6. Applicant's arguments filed 11/21/2008 have been fully considered but they are not persuasive.

The argument that the material taught by Valligny could/would not be used in the process taught by Meredith is not persuasive. Meredith teaches a process of coating silica particles, and that the coating material may be a polyolefin. Valligny teaches a polyolefin composition that is used in coating processes. The fact that in other applications the material taught by Valligny is not acceptable does not preclude its use in the process taught by Meredith. Meredith's process is not limited to low temperatures, and includes melt coating in instances where it is appropriate (column 5, line 23-column 6, line 2). The teaching in Meredith that polyolefins are suitable as coating materials, and that the coating process is easily adjusted to suit the characteristics of the polymeric coating selected for use clearly indicate that the use of the material taught by Valligny would be expected to be successful. The use of the material taught by Valligny in the process taught by Meredith is therefor the simple substitution of one polymeric coating material for another.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN M. JOHNSON whose telephone number is (571)270-3584. The examiner can normally be reached on Monday-Friday 7:30 AM to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENGO/
Supervisory Patent Examiner, Art Unit 1793

/Kevin M Johnson/
Examiner, Art Unit 1793